



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,391	04/15/2005	Masashi Watanabe	070759-0033	6874
20277 7590 05/11/2010 MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096				
EXAMINER				
NIU, XINNING				
ART UNIT		PAPER NUMBER		
2828				
MAIL DATE		DELIVERY MODE		
05/11/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/531,391

Applicant(s)

WATANABE ET AL.

Examiner

XNNING NIU

Art Unit

2828

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4, 5 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/23/2010 has been entered.

Response to Arguments

2. Regarding the applicant's argument that modifying De Poorter as modified does not show achieving an MTTF of 3,000 hours by controlling an oxygen concentration. The examiner does not agree. De Poorter discloses: oxygen concentration of approximately 20% prevents deposition of carbon layer on the coating of the laser facets and thus increases laser lifetime. De Poorter does not disclose a GaN based laser device. However, the prevention of carbon deposition on the coating on the facet of laser is independent of the laser type and emission wavelength. Takeya discloses a laser with a mean time to failure of over 5000 hours under 50mW continuous wave operation at 70°C. If the laser device of Takeya is placed inside the package of De

Art Unit: 2828

Poorter the mean time to failure of the device would also be increased because of the oxygen concentration. Therefore, it would have been obvious to one of ordinary skill in the art to use the apparatus of De Poorter as modified to obtain the claimed laser device.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1, 2, 4, 5, 9 rejected under 35 U.S.C. 103(a) as being unpatentable over De Poorter (U.S. Patent 5,578,863) in view of M. Takeya et al. "High-Power AlGaInN Lasers for Blu-ray Disc system," PROC of SPIE, vol. 4995, pgs. 117-122, January 2003.

5. Regarding Claim 1, De Poorter discloses: a semiconductor laser element (3) inside an airtight sealed package (20) (Figure 1, col 3, lines 47-50); Atmospheric gas inside the package is a mixture of oxygen and nitrogen with an oxygen content of approximately 20% (approximately 20% can also includes more than 20%) (Col 2, Lines 23-44); an air tight package with a oxygen concentration of approximately 20% prevents

deposition of carbon layer on the coating of the laser facets and thus increases laser lifetime (col 1, lines 30-35, col 2, lines 3-10).

6. De Poorter does not disclose: semiconductor laser device having active region formed of a gallium nitride based crystal; laser device with rated output power of 30 mW or more and a mean time to failure of 3000 hours or more at 70°C.

7. Takeya et al. disclose: AlGaInN laser device with mean time to failure of over 5000 hours under 50mW continuous wave operation at 70°C (page 121, abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made use the laser device of Takeya in the invention of De Poorter in order to obtain a high output power laser apparatus emitting in the blue/violet wavelength range.

8. However, In accordance with MPEP 2144.05[R-5] I, Overlap of Ranges: a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the oxygen concentration inside the package to more than 20% since the prior art discloses a concentration that is very close to the claimed concentration.

9. Regarding Claim 2, De Poorter discloses: semiconductor laser element having a dielectric oxide film (4) formed on a laser emission surface (Figure 1; Col 3, Lines 59-62).

10. Regarding Claim 4, De Poorter as modified discloses: semiconductor laser emitting light having a wavelength of 0.9 μm or less (col 4, lines 50-51).

11. Regarding Claim 5, De Poorter as modified discloses: semiconductor laser element (3) arranged in airtight sealed package and atmospheric gas inside the package is a mixture of oxygen and nitrogen with an oxygen content of 20% or more (dry air) (Figure 1, Col 2, Lines 30-31).

12. Regarding claim 9, please see the rejection for claim 1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to XNNING NIU whose telephone number is (571)270-1437. The examiner can normally be reached on M-T, 7:30-5:00 EST, Alternate Fridays 7:30-4:00 ES.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Sun Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ARMANDO RODRIGUEZ/
Primary Examiner, Art Unit 2828

/Xinning(Tom) Niu/
Examiner, Art Unit 2828
05/06/2010